- 10 -

## CLAIMS

1) A metal frame (1) made up of the union of a plurality of extruded elements (2); the frame comprising a plurality of linear bars (2), which have a constant cross section, are obtained by extrusion, and are joined to one another by means of welding at structural nodes defined by jointing bodies (3); each jointing body (3) having a number of respective pockets (4), which are designed to house corresponding linear bars (2); the frame (1) being characterized in that each jointing body (3) is of a box type and is made up of the union of a respective load-bearing element (5), which is substantially obtained by extrusion and has a given direction (6) of extrusion, with at least one pair of plane closing metal sheets (7), which are set perpendicular to the direction (6) of extrusion and are welded to the load-bearing element (5) on opposite sides of the load-bearing element (5) itself.

20

25

5

10

15

2) The frame (1) according to Claim 1, in which a load-bearing element (5) is formed by the lateral union of a number of simple elements (11), each of which is obtained directly via extrusion and has a given direction (6) of extrusion parallel to the direction (6) of extrusion of the other simple elements (11).

- 11 -

3) The frame (1) according to Claim 2, in which the simple elements (11) making up a load-bearing element (5) are joined to one another laterally by means of welding.

5

4) The frame (1) according to Claim 2 or Claim 3, in which the simple elements (11) making up a load-bearing element (5) are joined to one another laterally by mechanical slotting means.

10

5) The frame (1) according to Claim 2 or Claim 3 or Claim 4, in which all of the simple elements (11) making up one and the same load-bearing element (5) are the same as one another.

15

6) The frame (1) according to any one of Claims 1 to 5, in which the plane closing metal sheets (7) are welded to the load-bearing element (5) by means of a welding operation of an FSW type.

20

25

- 7) The frame (1) according to any one of Claims 1 to 6, in which one jointing body (3) comprises at least one further plane metal sheet (10) set parallel to the direction (6) of extrusion and welded to the load-bearing element (5) to define a respective pocket (4).
- 8) A motor vehicle provided with a metal frame (1) made

- 12 -

up of the union of a plurality of extruded elements (2) and built according to any one of Claims 1 to 7; the frame (1) comprising a plurality of linear bars (2), which have a constant cross section, are obtained by extrusion, and are joined to one another by means of welding at structural nodes defined by jointing bodies (3); each jointing body (3) having a number respective pockets (4), which are designed to house corresponding linear bars (2); the motor vehicle being characterized in that each jointing body (3) is of a box type and is made up of the union of a respective load-bearing element (5), which is substantially obtained by extrusion and has a given direction (6) of extrusion, with at least one pair of plane closing metal sheets (7), which are set perpendicular to the direction (6) of extrusion and are welded to the loadbearing element (5) on opposite sides of the loadbearing element (5) itself.

5

10

15

9) A method for the fabrication of a metal frame (1) made up of the union of a plurality of extruded elements (2); the method envisaging joining a plurality of linear bars (2), which have a constant cross section and are obtained by extrusion, at structural nodes defined by jointing bodies (3); each jointing body (3) having a number of respective pockets (4), which are designed to house corresponding linear bars (2); the

- 13 -

method being characterized in that each jointing body (3) is of a box type and in that each jointing body (3), is made by joining a respective load-bearing element (5), which is substantially obtained by extrusion and has a given direction (6) of extrusion, with at least one pair of plane closing metal sheets (7), which are set perpendicular to the direction (6) of extrusion and are welded to the load-bearing element (5) on opposite sides of the load-bearing element (5) itself.

5

10

15

- 10) The method according to Claim 9, in which a load-bearing element (5) is made by joining laterally a number of simple elements (11), each of which is obtained directly via extrusion and has a given direction (6) of extrusion parallel to the direction (6) of extrusion of the other simple elements (11).
- 11) The method according to Claim 10, in which the simple elements (11) making up a load-bearing element (5) are joined to one another laterally by means of welding.
- 12) The method according to Claim 10 or Claim 11, in which the simple elements (11) making up a load-bearing element (5) are joined to one another laterally by mechanical slotting means.

- 13) The method according to Claim 10 or Claim 11 or Claim 12, in which all of the simple elements (11) making up one and the same load-bearing element (5) are the same as one another.
- 14) The method according to any one of Claims 9 to 13, in which the plane closing metal sheets (7) are welded to the load-bearing element (5) by means of a welding operation of an FSW type.

5

15

20

- 15) The method according to any one of Claims 9 to 14, in which the closing metal sheets (7) are welded to the load-bearing element (5) prior to coupling the respective linear bars (2) to the load-bearing element (5) itself.
- 16) The method according to any one of Claims 9 to 14, in which at least one closing metal sheet is welded to the load-bearing element (5) after having coupled a number of respective linear bars (2) to the load-bearing element (5) itself.
- 17) The method according to any one of Claims 9 to 16,
  in which a jointing body (3) comprises at least one
  further plane metal sheet (10) set parallel to the
  direction (6) of extrusion and welded to the load-

WO 2005/061311

5

bearing element (5) to define a respective pocket (4).

18) The method according to Claim 17, in which the further plane metal sheet (10) is welded to the load-bearing element (5) to define the respective pocket (4) after the pocket (4) itself has been engaged by a corresponding linear element.